

Final Report Project 2007-11

Soil Description	USCS	AASHTO	Initial Plasticity	% Lime	Final Plasticity	Source
Clay	-----	A-7-6(14)	22.0%	3.0%	9.0%	Chistensen (1969)
Clay	-----	A-7-6(14)	22.0%	5.0%	4.0%	Chistensen (1969)
Accretion Gley	-----	A-6(12)	21.9%	3.0%	8.2%	Thompson (1967)
Clay loam	-----	A-6(9)	20.0%	3.0%	8.0%	Chistensen (1969)
Clay loam	-----	A-6(9)	20.0%	5.0%	4.0%	Chistensen (1969)
Lateric soil	-----	-----	17.8%	2.0%	13.7%	Ola (1977)
Lateric soil	-----	-----	17.8%	4.0%	9.2%	Ola (1977)
Lateric soil	-----	-----	17.8%	6.0%	6.2%	Ola (1977)
Lateric soil	-----	-----	17.8%	8.0%	2.0%	Ola (1977)
Lateric soil	-----	-----	17.8%	10.0%	1.3%	Ola (1977)
Hosmer B	-----	A-7-6(11)	17.0%	3.0%	NP	Transportation Research Board (1987)
Clay	-----	A-6(8)	17.0%	3.0%	2.0%	Chistensen (1969)
Clay	-----	A-6(9)	17.0%	3.0%	NP	Chistensen (1969)
Clay	-----	A-6(8)	17.0%	5.0%	1.0%	Chistensen (1969)
Clay	-----	A-6(9)	17.0%	5.0%	NP	Chistensen (1969)
Clay loam	-----	A-6(6)	15.0%	3.0%	5.0%	Chistensen (1969)
Clay loam	-----	A-6(6)	15.0%	5.0%	3.0%	Chistensen (1969)
Clay	CL	A-6a	13.8%	5.0%	8.2%	Chou, et al (2004)
Clay	CL	A-6a	13.4%	5.0%	9.0%	Chou, et al (2004)
Clay	CL	A-6a	13.4%	5.0%	10.3%	Chou, et al (2004)
Illinoian Till	-----	A-6(6)	11.7%	3.0%	4.8%	Thompson (1967)
AASHO Road Test	-----	A-6(18)	11.0%	3.0%	6.0%	Transportation Research Board (1987)
Illinoian Till	-----	A-6(6)	11.0%	3.0%	5.9%	Thompson (1967)
AASHO Road Test	-----	A-6(18)	11.0%	5.0%	5.0%	Transportation Research Board (1987)
Ottawa	-----	A-6(8)	10.8%	3.0%	5.6%	Thompson (1967)
Ottawa	-----	A-6(8)	10.8%	5.0%	4.6%	Thompson (1967)
Silty clay	CL-ML	A-4a	9.0%	5.0%	9.8%	Chou, et al (2004)
Silty clay	CL-ML	A-4a	7.9%	5.0%	2.2%	Chou, et al (2004)

1.2.6 Volume and Moisture Effects

Several physical transformations take place with respect to volume and moisture. Lime not only acts to make soil less plastic and more workable. It is also used in cases where there is excess moisture in the soil making it unworkable, where lime is added to act as a dewatering agent that absorbs this excess water. This characteristic of lime is also useful for field purposes other than typical strength gain. Moreover, lime addition to soil results in swell reduction, and it affects the moisture-density relationship by resulting in a decreased maximum dry density and an increased optimum moisture content.